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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,100	12/21/2001	Laurent Jean Marie Rouvellou	PHFR 000138	3137

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EXAMINER

SETH, MANAV

ART UNIT PAPER NUMBER

2625

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,100

Applicant(s)

ROUVELLOU, LAURENT JEAN
MARIE

Examiner

Manav Seth

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/21/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/27/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim 5 contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to claim 5, there does not appear to be written detailed description of the claimed limitation of "with the exception of the pixels contained in the natural contour areas (NC) determined by the gradient filter step (GF, THR)" in the application as filed. Lines 20-25 of the specification at page10 recites the same language but do not clearly explain any details of how "the exception of the pixels contained in the natural contour areas (NC) determined by the gradient filter step (GF, THR)" is performed. With respect to figure 1 the pixels from the gradient filter step comes to the low-pass filter (LPF) and this clearly confuse the idea of the claimed invention and does not include any "exception" processing. Therefore, more details are required in order to clearly explain the claimed limitation with respect to the figure 1. Without these additional details, one of ordinary skill in the art would be burdened by undue experimentation and delay in making or using the claimed invention.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed limitation of "with the exception of the pixels contained in the natural contour areas (NC) determined by the gradient filter step (GF, THR)" in claim 5 in application as filed must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,384,849 to Jeong.

Jeong discloses:

- Calculating discontinuity parameter due to the blocking artifact at the block boundary portion in lines 63-69 of column 4.
- Generating a post processing parameter, an artifact value, which is varied in proportion to the magnitude of the discontinuity degree parameter in lines 1-7 of column 5.
- Artifact values or the post processing parameter previously generated can be used in blocking artifact suppression in lines 10-15 of column 6.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong, U.S. Patent No. 5,384,849, and further in view of Kobayashi, U.S. Patent No. 6,175,596.

- Regarding claim 2, Jeong's invention has been discussed previously in the rejection of claim 1. However, Jeong does not teach the mathematical part of a calculating pixel mean value and discontinuity on the values of the pixels.

Kobayashi in figure 3A and lines 27-31 of column 4, teaches that each pixel has a mean value, which is equal to half sum of a value of the pixel immediately preceding and from the value of the pixel immediately following the current pixel. In lines 1-8 and lines 20-45 of column 5, Kobayashi discloses of calculating activity act to detect block distortion, as an average value of differences between neighboring pixels in the vicinity of block boundary.

Therefore, it would have been obvious to one having ordinary skills in the art at the time of the invention to consider the determination of an average value of differences between neighboring pixels in the vicinity of block boundary as the variation in luminance magnitude of the pixels whereas the variation in the luminance magnitude of the pixels calculates the degree of continuity and discontinuity of the image and one would have renamed activity act measurement as discontinuity measurement.

Also it is apparent that if a current luminance value of a pixel as pre-defined is different from a half-sum of a value of the pixel immediately preceding and from the value of the pixel immediately following from the current pixel, a discontinuity is detected. One would have been motivated to make a modification in the data processing method of Jeong in further view of Kobayashi such that the discontinuity measurement for reduction of blocking artifact was done at detailed pixel level.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong, U.S. Patent No. 5,384,849, and further in view of Jung, U.S. Patent No. 5,701,368.

- Jeong fails to teach the method comprising of a gradient filter step which is adapted to detect a natural contour area in the digital input image.

Jung in lines 60-65 of column 3 discloses a gradient filter step adapted to detect a natural contour area in the digital input image and also discloses use of Sobel filter for the same.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made, to use edge filter like Sobel filter to detect a natural contour in the digital image. One would have been motivated to make a modification in Jeong's invention in further view of Jung by including a gradient filter step, which is adapted to detect a

natural contour area in the digital input image, so as to avoid erroneous detections of blocking artifacts.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong, U.S. Patent No. 5,384,849 and in further view of Rackett, U.S. Patent No. 6,317,522.

- Claim 9 and 10 in combination with claim 1 discloses "A computer program product for a television receiver or a decoder comprising a set of instructions which, when they are loaded in a circuit of the television receiver, causes this circuitry to carry out the data processing method.

Jeong teaches the current data processing method to be performed on the encoder side but does not teach the same method to be performed on the decoder using software program.

However, Rackett does teach the data processing method to remove the blocking artifacts on the decoder side (figure 1A). Rackett In lines 30-35 and lines 45-50 of column 6 discloses the use of software programs to be used for a decoder to perform the processing. The above argument provides the rejection for claim 10.

Claim 9 claims to use software program at the television receiver to perform the data processing. A television is a receiver that receives the encoded image signals from the transmitter and in order to display the received image information signal on the screen it has to decode the

image signals and to decode, a decoder will be required. Therefore, decoder by Rackett will satisfy this limitation of claim 9.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made, to use the data processing method on the decoder. One would have been motivated to make a modification in Jeong's invention in further view of Rackett by carrying out the data processing method using software programs over the hardware as software modifications according to the user defined operations are easier and cost effective.

Allowable Subject Matter

9. Claims 6, 7 and 8 are objected to as being dependent upon a rejected base claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The instant invention relates to a method of processing data contained in a digital input image. The invention also comprises of steps for detecting blocking artifact. The limitation "calculating (GRID) a position of a grid corresponding to the blocks of the coding technique blocks from a majority of the block artifacts in the table" recited in claim 6, allows to calculate the position of the grid of the image from the position of block artifact value stored in a look up table in the memory. These features, in

combination with the other elements of the claims 7 and 8 are not disclosed or suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- Yang, U.S. Patent No. 6,741,752 discloses an improved block noise elimination method using Minimum Mean Square Error (MMSE) approach.
- Westerman, U.S. Patent No. 6,529,638 discloses block-boundary artifact reduction for block-based image compression.
- Chang, U.S. Patent No. 6,728,414 discloses a de-blocking method and apparatus, which uses a block classifier to determine a planar surface or complex surface.
- Lee, U.S. Patent No. 5,877,813 discloses loop filtering method for reducing blocking effects and ringing noise of a motion-compensated image.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (703) 306-4117. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso, can be reached on (703) 305-3885. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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